

STUDIES ON SNAILS OF THE GENUS PLEUROCERA
II. THE YOUNG OF *P. ACUTA*¹

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For several years the writer has been conducting a field study of *Pleurocera acuta* in the Sangamon River about three miles northeast of Mahomet, Illinois. Population samples have been taken regularly in the hope that analysis of periodic samples might lead to an interpretation of the life history. In the course of this study the eggs were discovered and the egg laying habits were described in the initial article in this series of notes.² In the routine method of population sampling employed to date, the smallest individuals retained by the nets and graded screens were 5.7 mm. in length and 2.5 mm. in diameter. Following the discovery of the eggs it became apparent that newly hatched young were not being secured by the apparatus used in taking the population samples. Individuals under 7 mm. in length were so infrequently represented in the samples secured by washing sand, mud, and gravel as to suggest the possibility that the very young snails occupy a habitat distinct from that chosen by older snails. Attention was therefore directed to the securing of observations on the newly hatched young.

On June 3, 1933, numerous egg masses, identical in all respects with those of *P. acuta* secured under laboratory conditions, were discovered on stones in the bed of the river at the field station mentioned above. Stones containing these masses were removed to the laboratory for observation. The sand-encrusted egg masses were badly obscured by vegetation covering the stones. A number of the masses were removed from the stones and placed in a watch glass. Within each mass the embryos were in approximately the same state of development though in different masses the conditions varied from late veligers to shellbearing young.

¹ Contributions from the Zoological Laboratory of the University of Illinois, No. 442.

² See NAUTILUS, Vol. 46, No. 1, pp. 29-34.

About twelve hours after the eggs were placed under observation, two very minute snails were found crawling actively over the bottom of the dish. These were studied alive and were later preserved for further study. The shell of the newly-hatched *P. acuta* has but a single whorl, with a maximum diameter of 0.4 mm. Because of the minuteness and fragility of the shell, measurements of the length were not obtained.

One of the two specimens kept under observation had the region of the aperture damaged, though the other possessed the prominently rhomboidal aperture distinctive of members of this genus. The shell in the region of the aperture carried very fine spiral sculpturing with a few fine longitudinally directed growth lines crossing the spiral markings. Except for shape of the aperture, the young of *P. acuta* closely resembles the young of *Goniobasis livescens* which Mrs. Jewell described and figured (NAUTILUS, Vol. 64, page 115). In this study the possibility of confusion is eliminated by the fact that *Goniobasis* does not occur in the Sangamon River and *P. acuta* is the only species of *Pleurocera* which is present in the upper waters of this stream.

The egg laying season apparently extends over several months, since eggs have been taken in the field in April and in June. No information about the length of the embryonic period is available. It seems probable that the 6 mm. young, representing the smallest size group present in the routine population samples, were probably hatched in May or June and thus were about seven months old. After hatching these shells had increased in diameter from 0.4 mm. to 2.5 mm.

The difficulty of recognizing minute shells barely visible to the naked eye, occurring in sand and in masses of algae, explains why the young of *Pleurocera* have not been recorded previously. The writer is not acquainted with any method of isolating and concentrating shells of such minute size from muddy detritus and sand.